Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

when the flowers were allowed to remain attached to the plant. When detached there was no increase during the opening of the corolla. Leaves of *Ampelopsis tricuspidata* gathered September 17, October 1, and again on November 2, showed a progressive increase in total organic acids during the autumnal reddening. When allowed to redden detached from the plant, there was no accumulation of acids. Small plants of buckwheat, when germinated in the dark, showed a steady increase in total acids until the eighteenth day after germination. When exposed to light during this time, a red pigment developed in the hypocotyl axis, but no corresponding increase in total acids was found, either in plants attached to or detached from the parent stock. Miss KOHLER states that this fact may mean that the destruction of organic acids formed in this case is greater than their production.

It is to be regretted that Miss KOHLER has not included some similar determinations upon leaves which remain green under certain conditions and which redden under certain other conditions, in order that a comparison might be made. There is some doubt in the reviewer's mind that titration of ash, after incineration of plant tissue, gives an approximate value of the combined organic acids in the tissue before incineration. Plant tissue is a complex material. Salt combinations other than those of organic acids with inorganic bases may be altered greatly by incineration, and may leave a basic ash. Organic acids may as well be combined with organic bases within the plant and both would be lost on heating. There is even the possibility of a mixture of inorganic salts becoming more basic upon heating in a muffle. There is a tendency toward accumulation of mineral salts as the leaf ages during autumn, according to PALLADIN.[18] This accumulation might account for an increase in basicity of ash independent of color formation. In the same way migration of mineral salts into corollas and subsequent use of certain anions such as sulphates, nitrates, and phosphates in building complex compounds connected with reproduction may leave basic elements which combine in various ways and which would increase basicity of ash upon incineration. On account of the many criticisms which might be justly directed against this method of determination of combined organic acid, and on account of the insufficiency of our knowledge of complex plant compounds, it is hoped that the author of the paper will continue her studies, including some corollas which do not redden at the time of opening, and some leaves which do not redden in autumn, together with other methods for quantitatively determining the acids in question.—J. M. ARTHUR.

Vegetation of Lower California.—As the result of an expedition conducted by members of the United States Bureau of Biological Survey in 1905 and 1906,

---

[18] PALLADIN, V. I., Plant physiology. p. 83. 6th. ed. transl. by LIVINGSTON, B. E., 1917.

NELSON[19] has given us a rather extensive account of the geography and resources of one of the least known regions of the continent. The larger portion of the report is occupied with an account of the exploration of the peninsula from north to south. Although 800 miles in length and from 30 to 100 miles in width, it possesses a population of little over 30,000, more than half of which is found in the extreme north on the delta plain of the Colorado River. Much of this sparcity of population is due to the essentially desert character of the peninsula as a whole. Rainfall records are very scanty, but show that there is rarely over 10 inches of annual precipitation, while over large areas from one to five years may pass with practically no rainfall. Some idea of the general aridity may be formed from the fact that throughout three-fourths of the entire length of the peninsula there are no forests whatever, only the tops of the higher mountains at the northern and southern ends being covered with trees. The only extensive forests are those contained in the northern area, where trees extend along a narrow belt 150 miles long on the higher slopes of the Juarez and San Pedro Martis Mountains, and within this area the merchantable timber does not cover more than 400 square miles. Here the more important species are *Pinus Jeffreyi*, *P. contorta*, *P. Lambertiana*, *Abies concolor*, and *Librocedrus decurrens.* Associated with them are other trees and shrubs, the same or similar species to those of southwestern California, often constituting a scattered chaparral.

The essentially desert character of the remainder of the peninsula is also shown by the inclusion of three-fourths of the entire land area within the Arid Lower Sonoran Life Zone and of more than half of the remainder within the Arid Tropical Zone. This zonal division also corresponds closely to the three main elements of the flora derived respectively from (1) the mountains and foothills of southern California, seen in the northern forests and scrub; (2) the deserts of the northwestern Sonora and southwestern United States; and (3) the lowlands and mountains of the southern Sonora on the mainland of Mexico.

Cacti appear to reach a climax in the Lower Sonoran, both in size and abundance. In his annotated list of species GOLDMAN[20] gives over 30 species belonging to 11 genera, varying in size from the smallest to such large forms as *Lemaireocereus eruca*, with huge, prostrate, caterpillar-like stems 6 or 8 ft. long, and the largest of the giants, *Pachycereus Pringlei*, more than 50 ft. high and three ft. in diameter. Many of the associated plants are the same as those of California, including species of the *Yucca*, *Agave*, *Fouqueria*, *Cercidium*, *Parkinsonia*, *Prosopis*, *Covillea*, and palms of the genera *Washingtonia* and

---

[19] NELSON, E. W., Lower California and its natural resources. Mem. Nat. Acad. Sci. **16**:1–194. *pls. 1–31.* 1921.

[20] GOLDMAN, E. A., Plant records of an expedition to Lower California. Contrib. U.S. Nat. Herb. **16**:309–371. *pls. 103–133.* map. 1916.

Erythea, these last at the base of the mountains. In the southern third of the peninsula many distinctly tropical genera appear, such as *Ficus*, *Mimosa*, *Cassia*, *Albizzia*, *Jatropha*, *Haematoxylon*, *Lantana*, *Manihot*, and *Chiococca*.

Among the more remarkable endemic desert forms, two trees may be mentioned. One, belonging to the Anacardiaceae, *Pachycormus discolor*, is found in the extremely arid central section of the peninsula. Seldom 10 ft. in height, the branches often shoot out twice that distance from the trunk, while their thickness (1 ft. or more), their abrupt ending in a few short twigs covered with red flowers, "reminding one of the proboscis of an elephant holding a nosegay," give a remarkably grotesque appearance to the tree. The leaves are minute and fall off before the flowers are fully developed. The associated monotypic genus *Idria columnaris* is in the Fouqueriaceae, and appears as a tree reaching 50 ft. in height in a scattered open forest. In contrast with the preceding it has a straight columnar trunk, usually without large branches. Illustrations of these and many other interesting and unusual plants add much to the interest of both reports.—GEO. D. FULLER.

Rubus in New England.—BRAINERD and PEITERSEN,[21] recognizing that "*Rubus* is one of the most polymorphic genera in the entire plant kingdom," have presented the blackberry group of that genus as displayed in New England. The authors say that the remarkable variation in the number of species recognized in the various taxonomic works is due to too great reliance upon herbarium specimens, to failure to appreciate the variations due to environmental conditions, and to lack of appreciation of the extent of interbreeding. The present study is based upon data from material in the field, behavior in garden cultures and controlled plots, characters of the progeny of supposed natural hybrids, and behavior of progeny when artificially crossed. The result is that the authors recognize twelve valid species of New England blackberries, and a long list of hybrids.

In following up the experimental work, PEITERSEN[22] has reached the following conclusions: variations due to external factors are very marked; primordia of the prickle, glandular hair, and simple hair are present in all species; a large percentage of infertility occurs in most species, largely due to defective pollen; cross pollination is the rule in all species, all the species studied being either nearly or completely self-sterile; all the species are capable of inter-crossing under favorable conditions; duplicates of natural hybrids were produced artificially; the progeny of a number of so-called species segregated as hybrids.

The paper is a good illustration of the test of genetics applied to taxonomy. —J. M. C.

---

[21] BRAINERD, EZRA, and PEITERSEN, A. K., Blackberries of New England; their classification. Bull. 217, Vermont Agric. Exper. Sta. pp. 84. *pls. 36*. 1920.

[22] PEITERSEN, A. K., Blackberries of New England; genetic status of the plants. Bull. 218, Vermont Agric. Exper. Sta. pp. 34. *pls. 19*. 1921.